electrode pads for respectively connecting thereto;

forming a plurality of bumps on said main surface that are respectively connected to said electrode pads;

placing a sheet of encapsulating material containing a thermosetting resin having a curing temperature over said semiconductor wafer so as to cover said main surface;

heating and curing said sheet encapsulating material by a heating apparatus to thereby form an encapsulating resin layer;

polishing said encapsulating resin layer to expose portions of said plurality of bumps; and

dividing said semiconductor wafer into individual semiconductor device chips;

wherein said heating and curing are done in such a manner that the heating of said sheet encapsulating material is at a heating temperature lower than the curing temperature of said sheet encapsulating material, at which the viscosity of said sheet encapsulating material is low and voids contained in said sheet encapsulating material can escape, and said sheet encapsulating material is kept at said heating temperature for a period of time determined to be sufficient for said voids to be eliminated, and thereafter said sheet encapsulating material is increased in temperature to said curing temperature or higher.

B2 CONT.

8. (Twice Amended) A method of manufacturing semiconductor devices, comprising:

forming a plurality of semiconductor devices on a main surface of a semiconductor wafer, the plurality of semiconductor devices having a plurality of electrode pads for respectively connecting thereto;

forming a plurality of bumps on said main surface that are respectively connected to said electrode pads;

placing a sheet of encapsulating material containing a thermosetting resin having a curing temperature over said semiconductor wafer so as to cover said main surface;

heating and curing said sheet encapsulating material by a heating apparatus to thereby form an encapsulating resin layer;

polishing said encapsulating resin layer to expose portions of said plurality of

bumps; and

dividing said semiconductor wafer into individual semiconductor device chips;

wherein said heating and curing are done in such a manner that the heating of said sheet encapsulating material is at a heating temperature lower than the curing temperature of said sheet encapsulating material, at which the viscosity of said sheet encapsulated material is low and voids contained in said sheet encapsulating material can escape, and said sheet encapsulating material is kept at said heating temperature and at a reduced pressure lower than atmospheric pressure for a period of time determined to be sufficient for said voids to be eliminated, and thereafter said sheet encapsulating material is increased in temperature to said curing temperature or higher.

B2

9. (Twice Amended) A method of manufacturing semiconductor devices, comprising:

forming a plurality of semiconductor devices on a main surface of a semiconductor wafer, the plurality of semiconductor devices having a plurality of electrode pads for respectively connecting thereto;

forming a plurality of bumps on said main surface that are respectively connected to said electrode pads;

placing a sheet of encapsulating material containing a thermosetting resin having a curing temperature over said semiconductor wafer so as to cover said main surface;

heating and curing said sheet encapsulating material by a heating apparatus to thereby form an encapsulating resin layer;

polishing said encapsulating resin layer to expose portions of said plurality of bumps; and

dividing said semiconductor wafer into individual semiconductor device chips;

wherein said heating and curing are done in such a manner that the heating of said sheet encapsulated material is at a heating temperature lower than the curing temperature of said sheet encapsulating material, at which the viscosity of said sheet encapsulating material is low and voids contained in said sheet encapsulating material can escape, and said sheet encapsulated material is kept for a first period of time under a first reduced pressure lower than atmospheric pressures at said heating temperature, and

thereafter repeatedly held plural times for a second period of time while being kept at said heating temperature at a second reduced pressure between the first reduced pressure and atmospheric pressure, the sheet encapsulating material being kept at said heating temperature for a total time determined to be sufficient for eliminating said voids, and thereafter said sheet encapsulated material is increased in temperature to the curing temperature or higher.

B2

10. (Amended) The method as claimed in claim 7, wherein the covering of said sheet encapsulating material is carried out by successively placing said sheet encapsulating material over said wafer from the end of said sheet encapsulating material so as to expel air.

B3

11. (Amended) The method as claimed in claim 7, wherein said bumps are formed in such a manner that the positions thereof as viewed from the main surface side of said wafer and those of said electrode pads are rendered different from one another on a plane basis.

12. (Amended) The method as claimed in claim 3, wherein said external terminals are formed after the formation of a wiring metal over said sheet encapsulating material in such a manner that the positions of said bumps as viewed from the main surface side of said wafer and those of said external terminals are different from one another on a plane basis.

B4

14. (Amended) The method as claimed in claim 7, wherein said sheet encapsulating material contains a curing agent for curing said thermosetting resin, in a state in which said curing agent is enclosed in a capsule broken at said curing temperature.

15. (Amended) The method as claimed in claim 7, wherein said sheet encapsulating material contains an antifoaming agent for removing said voids contained in said sheet encapsulating material.

Please add new claims 16-26 reading as follows:

16. (New) The method as claimed in claim 8, further comprising:

forming external terminals each having conductivity so as to be connected to said bumps respectively.

B5

17. (New) The method as claimed in claim 16, wherein said external terminals are formed after the formation of a wiring metal over said sheet encapsulating material in such a manner that the positions of said bumps as viewed from the main surface side of said wafer and those of said external terminals are different from one another on a plane basis.

18. (New) The method as claimed in claim 8, wherein the covering of said sheet encapsulating material is carried out by successively placing said sheet encapsulating material over said wafer from the end of said sheet encapsulating material so as to expel air.

19. (New) The method as claimed in claim 8, wherein said bumps are formed in such a manner that the positions thereof as viewed from the main surface side of said wafer and those of said electrode pads are rendered different from one another on a plane basis.

20. (New) The method as claimed in claim 8, wherein said sheet encapsulating material contains a curing agent for curing said thermosetting resin, in a state in which said curing agent is enclosed in a capsule broken at said curing temperature.

21. (New) The method as claimed in claim 8, wherein said sheet encapsulating material contains an antifoaming agent for removing said voids contained in said sheet encapsulating material.

22. (New) The method as claimed in claim 9, further comprising:

forming external terminals each having conductivity so as to be connected to said bumps respectively.

23. (New) The method as claimed in claim 22, wherein said external terminals are formed after the formation of a wiring metal over said sheet encapsulating material in such a manner that the positions of said bumps as viewed from the main surface side of said wafer and those of said external terminals are different from one another on a plane basis.

24. (New) The method as claimed in claim 9, wherein said bumps are formed in such a manner that the positions thereof as viewed from the main surface side of said wafer and those of said electrode pads are rendered different from one another on a plane basis.

B5

25. (New) The method as claimed in claim 9, wherein said sheet encapsulating material contains a curing agent for curing said thermosetting resin, in a state in which said curing agent is enclosed in a capsule broken at said curing temperature.

26. (New) The method as claimed in claim 9, wherein said sheet encapsulating material contains an antifoaming agent for removing said voids contained in said sheet encapsulating material.